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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Pekka Vallittu

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EXAMINER

MAI, HAO D

ART UNIT

PAPER NUMBER

3732

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/557,822	Applicant(s) VALLITTU ET AL.	
	Examiner HAO D. MAI	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2.. **Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad et al. (6,039,569) in view Brattesani et al. (6,234,793 B1).**

Regarding claims 1-2, Prasad et al. disclose a matrix band/ribbon/wrap 30 comprising fibers and a matrix, at least a portion of said matrix being at least partially uncured, and partly cured (Fig. 3E; column 5 lines 12-18; column 6 lines 8-10). Prasad et al. implicitly disclose the matrix band/ribbon/wrap to be of a very thin thickness. For example: the wrap 30 (Fig. 3C) should be of a thin thickness suitable for wrapping around a tooth and fitting between two teeth; the occlusal strip 20 (Figs. 2A-2D) and the strip 62 (Figs. 6C) should be of a thin thickness to adhere smoothly to the occlusal or side surface, respectively, or a tooth. However, Prasad et al. are silent to the matrix band having a thickness specifically ranging from 0.05 to 1.5 mm and consisting of a substantially cylindrical band.

Brattesani et al. disclose that it is well known within the field of dentistry that such matrix bands can have a typical thickness of 0.05 mm (column 2, lines 1-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make Prasad et al.'s matrix band, strip, ribbon, and/or wrap, having a thickness of 0.05 mm, which is within the claimed range of 0.05 mm to 1.5 mm, so that contact between the band, the tooth,

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and/or the restorative composite is optimized as explicitly taught by Brattesani et al. Such modification also would have been obvious since it has been held that discovering an optimum or workable ranges and/or changing a component's size involve only routine skill in the art. See *MPEP* §§ 2144.05.

Furthermore, it is well known in the dentistry field for a matrix band to have a substantially cylindrical shape adapted to encircle a single tooth. In fact, Prasad shows at least a portion of the band forming a substantially cylindrical shape adapted to encircle a tooth (Figs. 3E-3F). Brattesani et al. disclose the matrix band consisting of a substantially cylindrical band 200 adapted to encircle a single tooth (Fig. 7C-7D). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Prasad by making the matrix band consisting of a substantially cylindrical band as taught by Brattesani et al. since such modification is merely a change in shape and/or configurations, which is a matter of design choice well within the skill of an artisan in order to obtain optimum results. See *MPEP* § 2144.04.

As to claim 3-4, Prasad et al. disclose the polymeric matrix to comprise methacrylate (column 3 lines 28-46) and fibers, such as polyolefins (column 3 lines 28-46). As to claim 5, the fibers are disclosed to be continuous and multi-directionally oriented (column 3 lines 1-16). As to claims 6-7, the disclosed matrix further comprises particulate filler material, such as silica, silicate glass, etc. (column 3 line 60 – column 4 lines 8). See *MPEP* 2173.05(h) concerning *Markush Groups*.

As to claims 8-9, Prasad et al. also disclose a kit as claimed. For example, Figures 6A-6E show matrix band/strip 62 (Figs. 6C), a restorative dental composite (column 6 lines 63-65), and a bonding adhesive (column 6 line 56). Also note the applicator devices in Figure 6D.

Response to Arguments

3. Applicant's arguments 12/03/2008 have been fully considered but they are not persuasive. Applicant argued that Prasad shows an occlusal strip to be positioned between opposing dental structures, not a matrix band conventionally meant to be wrapped around a single tooth; and that the occlusal strip's capability to function as a matrix band is not the test for patentability.

Firstly, note that such "matrix band" is recited in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. *See In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Secondly, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Thirdly, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. *In re Hutchison*, 69 USPQ 138.

In this particular case, the Examiner has given more patentable weight to the matrix band, albeit it is recited in the preamble, because of the conventional meaning of a matrix band in the dentistry field. The recited matrix band conveys: (1) a functional limitation of conventional intended use of wrapping around a tooth in order to contain the filling; and (2) structural limitation that it be a matrix and a band. The examiner maintains that such both functional and structural limitations are met by Prasad. Prasad clearly shows the band 30 is structurally a matrix and a

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band, ribbon, wrap, or strip. Functionally, band 30 is capable of being wrapped around a single tooth as shown in Figs. 3E-3F.

Regarding the combination of Prasad and Brattesani, Applicant argued that it would not be obvious to modify Prasad in view of Brattesani because Brattesani discloses a frictional engagement surface. Note Brattesani was used to show the claimed range; there is no need to incorporate the frictional surface of Brattesani into Prasad as argued by Applicant.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAO D. MAI whose telephone number is (571)270-3002. The examiner can normally be reached on Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hao D Mai/
Examiner, Art Unit 3732

/Cris L. Rodriguez/
Supervisory Patent Examiner, Art Unit 3732